



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AUMGTR3002 Manufacture or modify wiring harnesses**

**Release: 1**

## AUMGTR3002 Manufacture or modify wiring harnesses

### Modification History

Not applicable.

### Unit Descriptor

|                        |                                                                                                                                                                                                                                                                                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unit descriptor</b> | This unit describes the application of the required skills and knowledge to manufacture or modify wiring harnesses including checking, replacement and labelling of the wiring harness.<br>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication. |
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### Application of the Unit

|                                |                                                                                                                                                                                                                                                           |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Application of the unit</b> | This unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge at a specialist level. These skills and knowledge are to be used within the scope of the person's job and authority. |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

Not applicable.

### Employability Skills Information

|                             |                                          |
|-----------------------------|------------------------------------------|
| <b>Employability skills</b> | This unit contains Employability Skills. |
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## Elements and Performance Criteria Pre-Content

|                                                                   |                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Elements describe the essential outcomes of a unit of competency. | Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide. |
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## Elements and Performance Criteria

| ELEMENT                                                    | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Check/test wiring harness and determine required action | <ul style="list-style-type: none"><li>1.1. Job assessment is carried out according to <b><i>OHS</i></b> and <b><i>organisation requirements</i></b></li><li>1.2. Wiring harness and job specification is checked to determine required action</li><li>1.3. Materials and equipment for the manufacture / modification are identified and accessed</li></ul>                                                                                                     |
| 2. Manufacture wiring harness                              | <ul style="list-style-type: none"><li>2.1. Electrical circuit wiring diagrams are accessed and interpreted from appropriate manufacturer specifications</li><li>2.2. Harness is manufactured to job specifications using appropriate tools, techniques and <b><i>materials</i></b></li><li>2.3. Harness is tested prior to placing in service and results are recorded</li></ul>                                                                                |
| 3. Modify wiring harness                                   | <ul style="list-style-type: none"><li>3.1. Job information is accessed and interpreted from appropriate manufacturer specifications</li><li>3.2. Wiring harness is labelled and removed using appropriate tools and techniques</li><li>3.3. Associated components are labelled and removed and tagged for storage</li><li>3.4. Modified harness is correctly fitted to vehicle and reconnected according to manufacturer specifications and/or labels</li></ul> |

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

#### Required skills

- speak clearly and directly in order to inform team members of completed wiring and modification work
- apply teamwork to a range of situations
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure the correct testing of harnesses is carried out
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

#### Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- interpreting wiring diagrams and graphic symbols
- cable types/sizes, current carrying capacity and their application
- circuit testing procedures (voltage drop and circuit performance)
- repair and manufacture procedures
- electrical termination types, applications and procedures
- harness taping techniques
- fault finding using aural, visual and functional assessments for damage, corrosion, wear and electrical defects

## Evidence Guide

### EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

#### Overview of assessment

#### Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities
- maintaining a working knowledge of current work systems and practices
- working and communicating effectively and positively with others involved in the work
- applying, within authority, the requirements of the job or work role in relation to:
  - achieving production goals
  - achieving work quality goals
  - responding positively to changing work requirements
  - contributing effectively to cost reduction initiatives
  - effectively applying problem solving techniques
- modify activities to cater for variations in organisation context and environment
- check/test wiring harnesses
- manufacture or modify wiring harnesses
- removal and replacement of wiring harnesses
- test wiring harnesses and locate faults
- terminate electrical connections
- select and use appropriate materials for manufacture/modify of wiring harnesses
- complete organisation documentation - written / electronic.

#### Context of and specific resources for assessment

- assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process
- assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.

#### Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for

**EVIDENCE GUIDE**

this unit:

- assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge
- assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application
- assessment may be applied under project related conditions (real or simulated) and require evidence of process
- assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

## Range Statement

### RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

***OHS requirements*** may include:

Legislation and regulations, organisational safety policies and procedures and may include: the use of personal protective equipment and clothing, rescue services, fire fighting organisation and equipment, first aid equipment, hazard and risk control and elimination, systems covering the use of hazardous materials and substances and manual handling procedures including lifting and carrying.

***Organisation requirements*** may include:

- access and equity principles and practices
- environmental management (waste disposal, recycling and re-use guidelines)
- emergency and evacuation procedures
- equipment use procedures
- ethical standards
- legal obligations
- maintenance and storage procedures
- OHS requirements
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality assurance guidelines
- quality and continuous improvement processes and standards
- recording and reporting guidelines.

***Materials*** may include:

- tagging/labelling materials
- cable of various types and sizes
- electrical tape
- terminals
- fitting equipment
- terminating equipment
- chassis assembly

**Unit Sector(s)**

|                    |                                       |
|--------------------|---------------------------------------|
| <b>Unit sector</b> | Technical - Electrical and Electronic |
|--------------------|---------------------------------------|

**Competency field**

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|-------------------------|----------------------------------------|
| <b>Competency field</b> | Manufacturing - Bus, Truck and Trailer |
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**Co-requisite units**

Not applicable.